



College of Rural Alaska

Cooperative Extension Service

# Composting in Coastal Alaska

HGA-01021

## What is Compost?

Compost is decomposed dark and crumbly organic matter. It is the end product of a speeded-up, naturally occurring process. The nutrients which were incorporated during growth and production, are recycled back into the soil.

## Why Should I Use Compost?

- It recycles materials that would otherwise be discarded.
- It maintains and builds the structure of many soils.
- It provides nitrogen, phosphorous and potassium as well as secondary and trace elements necessary for growth.
- It prevents leaching of nutrients from the plant root zone.
- It can protect against soil erosion.

## Does Composting Produce Odors?

Correctly done, composting will not produce any offensive odor. The placement of the compost can be carefully selected to avoid being an eyesore or attractive to rodents.

## How Do I Make Compost?

Composting requires preparation and management to allow bacteria and fungi to decompose the material. There are two methods of composting. In **anaerobic** composting, anaerobic organisms slowly break down material in the absence of oxygen. Finely divided material gets compacted and becomes oxygen deficient in the interior of the pile; this results in anaerobic composting. Pits, enclosed boxes, or barrels can also provide conditions for anaerobic composting. The other method is **aerobic** composting. Oxygen is supplied by turning the material periodically allowing aerobic organisms to operate at peak efficiency. A desirable final product can be produced in 3 to 4 weeks with this method.

Organic matter contains carbon in its molecular structure. The microorganisms require nitrogen to be able to utilize this carbon as food. A carbon to nitrogen ratio of 20:1 to 30:1 is required to maintain a continuously and effectively

operating system. Sources of carbon include straw, leaves, sawdust, and wood chips. Sources of nitrogen include manure, fish waste, bloodmeal, grass clippings, garden waste, soybean and cottonseed meal and nitrogen fertilizer. An adequate supply of nitrogen is necessary to maintain a high population of microorganisms for rapid composting.

## Advantages of Aerobic Composting

- Materials with a satisfactory carbon to nitrogen ratio will break down in a few weeks.
- Temperatures in the center of the compost pile (120° F to 160° F) will kill many weed seeds and reduce or eliminate plant pests and pathogens.
- Many vegetable kitchen scraps and similar materials can be decomposed in a few days.
- Aerobic decomposition usually occurs with a minimum of odor.

## Building the Compost Pile

- Fall is an ideal time to build a compost pile because plant material is available from that growing season.
- Minimum size should be 3'x3'x5' to allow for aeration, adequate moisture level and desired temperature.
- An enclosure constructed of hardware cloth, heavy wire screen, or similar material will help maintain the desired shape and size.
- Coarse materials should be chopped or shredded to give a larger surface area for microorganisms to work on.
- Turn the pile every 5 to 8 days to keep it aerated and to move materials to the inside for decomposition.
- Adequate moisture is required for activity. You may have to add water (warm) during dry periods or cover the pile during wet periods.
- The composting process is complete when the compost pile no longer heats up within a few days of turning.

The size of the pile should have been reduced by 30 to 50 percent from the original size upon completion.

## Troubleshooting

### Problem:

The temperature does not reach 110° F to 120° F even though sufficient material is available and the moisture level is adequate.

### Possible Solution:

Additional nitrogen may be required to establish the correct carbon to nitrogen ratio.

### Problem:

The pile heats up but cools down fast and some material remains undecomposed.

### Possible Solution:

The pile is undergoing anaerobic decomposition –time to turn it.

### Problem:

Dogs, rats or other animals are attracted to the pile.

### Possible Solution:

Don't add meat scraps, bones, or fish waste to the pile.

## How and Where to Use Compost

- Use a heavy layer around woody perennials in the fall to reduce drying by winter winds.
- Use a mulch around warm season vegetable crops (zucchini and outdoor tomatoes) applied after the soil has warmed up.
- Spread on the garden prior to spring tilling.
- As a slow-release fertilizer by applying as a side-dressing to vegetable crops.
- Lawns, shrubs, and trees can be fertilized with "compost tea" made by adding one shovel of compost to a bucket of water and allowing to "steep."
- A 1 to 2 inch thick mulch around flowers, trees, and shrubs in the spring to maintain soil moisture and discourage weed growth.
- Use a growing media for seedlings and for potted plants. After screening, pasteurization is recommended prior to use as media for seedling production.

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